

AMENDMENTS TO THE CLAIMS

Claims 1 to 11 (previously cancelled)

Claim 12 (currently amended)

A method for conditioning a polymeric proton fuel cell exchange membrane for operation at temperatures above 100°C, the method comprising the steps of:

- a: heating the a polymeric proton fuel cell exchange membrane(membrane) to an elevated temperature above its transition temperature;
- b: selecting a desired percentage of conversion of the heated membrane polymer from an initial amorphous state to a crystalline state;
- c: holding said membrane at the elevated temperature for a predetermined interval, wherein the predetermined interval has been selected to permit the desired percentage conversion of amorphous to crystalline state; and
- d: returning the membrane to ambient temperature.

Claim 13 (previously added)

The method of claim 12 wherein the said operating temperature is below the glass transition temperature of said membrane.

Claim 14 (previously cancelled)

Claim 15 (previously added)

*can distinguish fr. prior art by
degree of sulfonation
ref (19 % molar) (col. 12,
last p.)*

The method of claim 12 wherein the operating temperature of said membrane is at least about 130°C.

Claim 16 (previously amended)

The method of claim 12 wherein the percentage conversion of crystalline state is determined using X—ray spectroscopy.

Claim 17 (previously cancelled)

Claim 18 (previously added)

The method of claim 12 wherein the polymer comprises a hydrocarbon bearing fluorine and sulfate group.

Claim 19 (previously added)

The method of claim 12 wherein the polymer comprises a perfluorocarbosulfonic acid polymer.

Claim 20 (previously added)

A membrane for a fuel cell that is capable of operating in the range of 100° to about 160°C wherein the membrane is prepared by the method of claim 12.

Claim 21 (previously added)

A membrane for a fuel cell that is capable of operating in the presence of 1% carbon monoxide, wherein the membrane is prepared by the method of claim 12 and is operated at a temperature above 100°C.

Claim 22 (previously added)

The membrane of claim 20 wherein the operating temperature is above 130°C.

Claim 23 (previously added)

The membrane of claim 20 wherein the operating temperature is less than the glass transition temperature of the polymer.

Claim 24 (previously cancelled)

Claim 25 (currently amended)

A method of operating a polymer electrolyte membrane fuel cell at elevated temperatures equipped with a membrane conditioned by claim 12 comprising supplying an oxygen containing gas at the cathode and supplying at the anode a fuel selected from the group consisting of hydrogen, reformat, methanol and ethanol.

Claim 26 (previously added)

The method of claim 25 wherein the fuel contains carbon monoxide and the operating temperature is at least 100°C.